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The genus *Phthirpediculus* Ewing (Anoplura, Phthiraptera, Insecta)

by Theresa Clay *

Résumé. — L'auteur décrit une nouvelle espèce de *Phthirpediculus* (Polyplacinae), sur *Lemur mongoz* Linné ; elle donne des caractères additionnels pour *P. avahidis* Paulian, y compris ceux des mâles, et les deux espèces sont comparées aux figures et à la description de *P. propitheci* Ewing *in* Ferris, 1932.

Abstract. — A new species of *Phthirpediculus* (Polyplacinae) from *Lemur mongoz* Linneus is described ; further characters of *P. avahidis* Paulian are given including those of the male and both species are compared with the figures and description of *P. propitheci* Ewing *in* Ferris, 1932.

I am indebted to Dr E. R. Brygoo for sending me the material of the new species and to Dr Loïc Matile of the Muséum national d'Histoire naturelle for the loan of the type slide of *P. avahidis*. This slide is labelled " Type *Phthirpediculus avahidis* " and the second label has details of the locality, host and collector as in the published description. There are two females as stated, but also two males ; these are small and inconspicuous and were, no doubt, overlooked. As no holotype has been marked on the slide it is necessary to designate one of the females as lectotype : this has been done and the slide marked accordingly. No specimens of *propitheci* having been seen, comparisons have been made with the figures of Ferris (1932 : 296-297) ; his terminology for the parts of the male genitalia has been followed. All references, therefore, to the characters of this species refer to the Ferris figures.

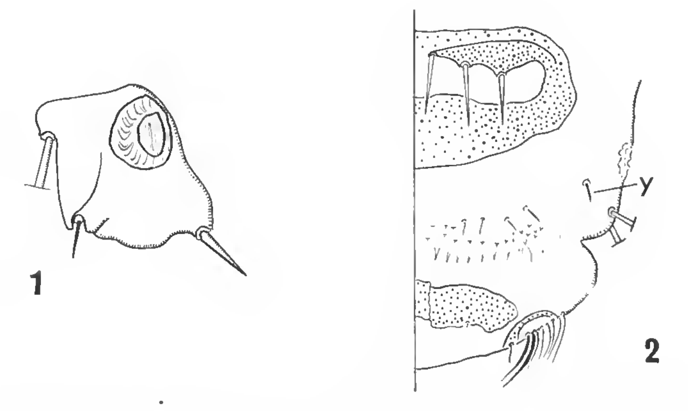
Phthirpediculus brygooi n. sp.

Description

Head and thorax as in figure of *avahidis in* Paulian (1960, fig. 1a) except that the stout seta at the postero-lateral corner of the head has been omitted in that figure ; it is shown in the Ferris figures and is present in all three species. The male antenna as in Ferris, but with the tubercles as in the female of *avahidis* ; *propitheci* appears to have fewer tubercles on the head and a more rounded anterior margin. There is a tubercle on the third coxa, pointed in the new species, bifid in *avahidis* and absent in the figure of *propi-*

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theci. In both *avahidis* and *brygooi* there is a single stout seta on each of the sclerites forming the divided thoracic sternal plate, whereas *propitheci* has a pair of long, probably finer, setae on each plate.

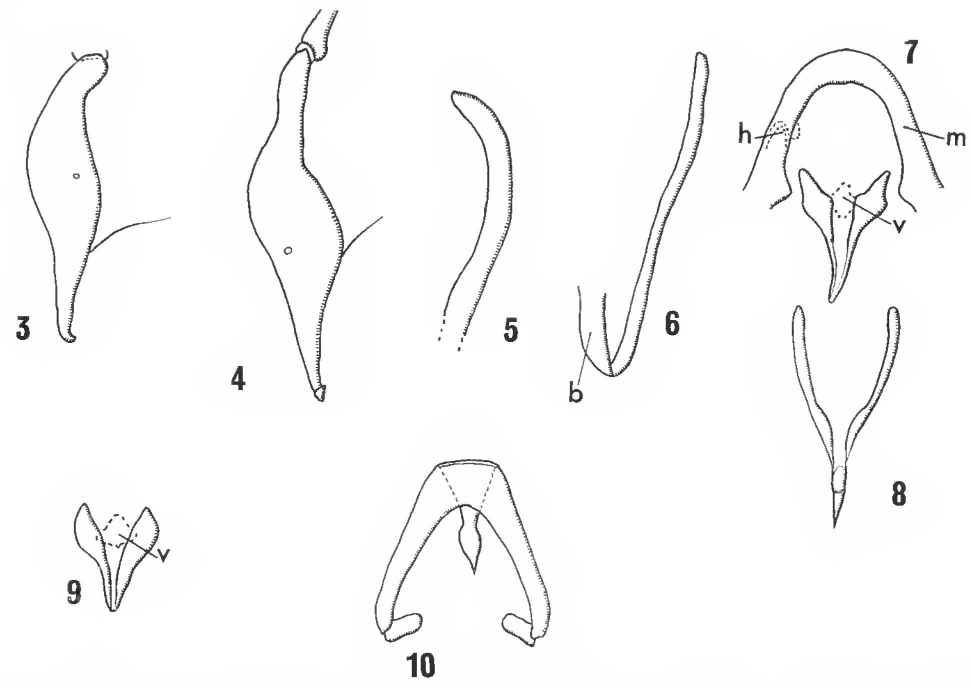


Figs 1-2. — *Phthirpediculus brygooi* sp. n. : 1, Paratergite IV, ♀; 2, Sterna of ♀ terminal segments. Seta y. shows considerable intraspecific variation in length.

Abdomen with spiracles on III-VIII. Paratergites on segments III-VIII, III-VI similar in shape but becoming smaller towards the posterior end of the abdomen ; sclerotization of VII and VIII greatly reduced ; chaetotaxy of paratergite III-VII as in figure 1, VIII with two elongate setae only. *P. avahidis* differs in having the outer seta of III-VII longer (♂ 0.076, ♀ 0.100 on IV) than in *brygooi* (♂ 0.015, ♀ 0.022) ; *propitheci* has two long inner setae, the two posterior setae are smaller and the plate differs in shape. The chaetotaxy and the shape of the plate in the two most recent species invalidates couplet 7 of the key *in* Ferris, 1951 : 163. Male genital plate faintly sclerotized and similar in shape to that of *propitheci*, not apparent in the available specimens of *avahidis*. Dorsum and venter of male and female abdomens tranversely rugose with numerous minute spines in female *avahidis* (Paulian, fig. 1 d), these being less numerous in the male and present only anterior to the vulval margin of the female in *brygooi*. Female genital region similar in the three species ; central setae 4 and 6 in figures of *propitheci*, 6 and 7 in the two specimens of *avahidis* (not 8 as shown in figure) and 6 in *brygooi*, this latter species differs in having the setae borne on projections of the sclerite (fig. 2). Pointed projections from the vulval edge shorter and less numerous than in *avahidis*. Both *avahidis* and *brygooi* have 4-5 small setae each side, submarginal to the vulval edge (omitted in Paulian, fig. 1 d) ; in *propitheci* there are in addition two longer setae each end.

Male copulatory apparatus similar in general features to that of *propitheci* with the exception of the paramere which is a narrow transparent structure continuous with the outer bar of the basal apodeme (fig. 6). Lateral sclerite (Ferris, F.) broad with distal hooked end (fig. 4) appearing to articulate anteriorly with the curved mesal sclerite (Ferris, B) (fig. 7) ; penis larger and differing in detail from that of *propitheci* ; pseudopenis (fig. 8) with shorter and weaker arms than those of the other species. Copulatory apparatus in the two specimens of *avahidis* distorted but similar to that of *brygooi* ; it is not

possible to see the true shape of the mesal sclerite. Penis shorter and the small ventral sclerite (fig. 9 v) differs in shape ; the longer and thicker arms of the pseudopenis perhaps articulate with the mesal sclerite as probably does sclerite F as in *brygooi.* In both specimens of *avahidis* the arms are bent back on the body of the pseudopenis and have been drawn in this position (fig. 10). Paramere and sclerite F (figs 5,3) similar to those of *brygooi* but smaller.



FIGS. 3-10. — Male copulatory apparatus of *Phthirpediculus* spp. : 3, Sclerite F, *P. avahidis* ; 4, *id.*, *P. brygooi* ; 5, Paramere, *P. avahidis* ; 6, *id.*, *P. brygooi* ; 7, Mesal sclerite and penis, *P. brygooi* ; 8, Pseudopenis, *P. brygooi* ; 9, Penis, *P. avahidis* ; 10, Pseudopenis (bent back on itself), *P. avahidis* ; b, basal apodeme ; h, head of sclerite F ; m, mesal sclerite ; v, ventral sclerite of penis.

Chaetotaxie of the abdomen. Tergum ♂ : I, 2 rows of 4 setae with 1-2 minute setae each end ; II-VII, each with 4 central setae and a more lateral seta each side, the outer seta of the 4 central setae on segments II-IV may be shorter and stouter than the rest ; VIII, 1-2 short setae each side and 16-21 minute central setae. VII has the outer setae each end of the 4 central considerably shorter and finer. *P. avahidis* as above except the central minute setae of VIII are in two clumps of 4 setae each with 2-3 scattered setae. ♀ : I-VI as in ♂ but the outer setae of the 4 central are not shorter and more spiniform ; VII as in VI ; VIII, a continuous row of 6 similar setae ; IX, 2 + 2. *P. avahidis* as above except that VIII has only 4 setae. I have considered the segment with the two rows of setae to be I not II as in FERRIS, 1951 : 199 : the first two rows of setae are similar to each other, whereas the third has the arrangement as on segments III-VII ; it seems, reasonable therefore to consider the third row to belong to segment II and the first two rows to segment I. *In* 1951 :

199, Ferris states that the two rows are found only in the female but shows them correctly as present in his figure of the male. Sternum ♂ : I, 0 ; II, 5-6 ; III-VII, 4 ; VIII-IX, 2. *P. avahidis* differs in having the two outer setae each side of II short and fine. ♀ : I-VII as in male ; terminal segments as in fig. 2. *P. avahidis* as in *brygooi* ; *propitheci* appears to have a greater number of setae. Paratergal setae described above.

Dimensions (in mm.). — Head width : ♂ 0.142-0.157, $\bar{X}$ 0.148 (12) ; ♀ 0.150-0.160, $\bar{X}$ 0.155 (5). Head and thorax length (to posterior margin of meso-thoracic pleural ridge, Ferris, 1932 : 298) : ♂ 0.262-0.270, $\bar{X}$ 0.268 (11) ; ♀ 0.285-0.300, $\bar{X}$ 0.292 (4). Total length : ♂ 0.877-1.012, $\bar{X}$ 0.955 (11) ; ♀ 1.342-1.470, $\bar{X}$ 1.390 (5).

Material examined

P. brygooi : 12 ♂, 5 ♀ from *Lemur mongoz* Linn., 1766, Zoological Gardens (captive for 6 months), Majunga, Malagasy Republic, March, 1963 (E. R. Brygoo : 125/63. L. 57).

Holotype : ♂ with the above data deposited in the Muséum national d'Histoire naturelle, Paris, at the request of Dr E. R. Brygoo. Paratypes : 11 ♂, 5 ♀ with the same data as holotype.

P. avahidis : slide marked type : 2 ♀ (1 holotype, 1 paratype but specimens not marked), 2♂♂. Lectotype of *P. avahidis* here designated : ♀ (in ink circle).

Dimensions of 2 ♂, 2 ♀ of *P. avahidis*. — Head width : ♂ 0.157. 0.146 ; ♀ 0.157, 0.165. Head and thorax length : ♂ 0.240, 0.236 ; ♀ 0.247, 0.247. Total length ♂ 0.743, 0.805 ; ♀ 1.19, 1.21.

Discussion

These three species are most easily separated by the chaetotaxy and shape of the paratergites ; other distinguishing characters have been given under the description of the new species. Of the three known species, *avahidis* and *brygooi* resemble each other the most closely, especially in the abdominal chaetotaxy and the form of the sclerites of the copulatory apparatus.

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